

Dimensions of the type (measured in the flesh):—

Head and body 135 mm.; tail 170; hind foot 32; ear 18.5.

Skull: greatest length 38.6; basilar length 29.5; condylo-incisive length 33.5; zygomatic breadth 19.6; interorbital constriction 6.8; squamosal breadth of braincase 16.4; palatilar length 17.5; length of palatal foramina 6.5; alveolar length of upper molar series 6; length of upper molar series 5.5.

Hab. Baringo, British East Africa. Altitude 4000 feet.

Type. Old female. B.M. no. 10. 12. 19. 15. Original number 1383. Collected by Mr. Robin Kemp on October 13th, 1910. Presented to the British Museum by Mr. C. D. Rudd.

This Baringo gerbil appears most nearly related to the Somali species, *T. phillipsi*, as is clearly shown by the similarity between the skulls of the two forms. The external colour-difference is however so marked that it is necessary to consider the Baringo specimen as representing a distinct dark-coloured race of *phillipsi*. In general colour this new form most nearly approaches *T. dundasi*, a species described by Wroughton from Mt. Elgon; but *umbrosa* does not appear to be in any way closely allied to the Elgon gerbil, which is a very much larger animal, with a skull 45 mm. in length.

XXII.—*Descriptions and Records of Bees.*—XLII.

By T. D. A. COCKERELL, University of Colorado.

Megachile cetera, sp. n.

♀.—Length about 10½ mm.

Black, with white and black hair, the broad abdomen with distinct white hair-bands. In nearly all respects like *M. quinquelineata*, Ckll., but the mesothorax and scutellum are minutely and densely rugoso-punctate, the tegulae are rufo-fuscous, and the hair on the inner side of the tarsi is clear ferruginous.

Hab. Nagambie, Victoria, 1910 (*French*) = type; Gippsland, Victoria (*Froggatt*); Sydney, N.S.W., one from F. Smith's collection, erroneously labelled *M. maculata*, Smith; near Cooma, N.S.W., Jan. 10, 1903 (*Sellar*).

The specimen from near Cooma has no black hair on

head and thorax above, but the pubescence is stained with brown. It possibly represents a distinct race. All the specimens, except that from Sydney, are from the Froggatt collection.

Megachile glaberrima, Friese, appears to be very close to *M. quinquelineata*, Ckll.; both were taken by Turner at flowers of heliotrope at Mackay. *M. glaberrima* differs from *quinquelineata* in having the hair of head and thorax all white, according to Friese's account.

Megachile trichognatha tosticauda, subsp. n.

♀.—Length about 8 mm.

Agrees with *M. trichognatha*, except that it is smaller, with the apical median clypeal elevation very small or absent; the lower margin of the clypeus rather obscurely crenulate; the flagellum bright ferruginous beneath; and the punctures of upper part of head and thorax conspicuously larger. The ventral scopa is entirely white; the fifth and sixth abdominal segments above, and the hind margin of the fourth, are almost entirely covered with fulvous hair; the tegument of the apical part of the abdomen is black, except the hind margin of the fifth segment, which is narrowly red. Also close to *M. eucalypti*, Ckll., but smaller, with the antennæ differently coloured, and not so much of the abdomen fulvous-haired.

Hab. Mackay, Queensland, December 1910 (Turner).
British Museum.

Probably a distinct species, but so close to *M. trichognatha* that, with only two specimens, and no male, I treat it as a subspecies. Superficially, the insect looks like an unusually slender *M. gilbertiella*, Ckll.

Megachile holura, sp. n.

♂.—Length about 9½ mm.

Parallel-sided, black, with black and white hair, and a large red apical hair-patch on abdomen; hair of head and thorax long, white, but black on vertex, mesothorax, and disc of scutellum; head large but normal; clypeus normal, very densely punctured; antennæ long and slender, entirely black; upper part of head dull and extremely densely punctured, but there is a shining area laterad of each posterior ocellus; mesothorax and scutellum densely punctured; tegulæ black. Wings hyaline, with a brownish tint, nervures dark; recurrent nervures joining second s.m. near base and

apex, the distance the same in each case. Legs black, anterior tarsi slender and simple. Abdomen closely punctured, with white hair on first segment and apically at sides of second, beyond which the hair is short and black, except for the large apical orange-red patch, which extends from the apical middle of the fourth segment, covers the fifth except the sides, and thinly clothes the middle of the sixth; tegument under the red patch black; sixth segment very broadly rounded but produced apically, quite entire; venter with white hair.

Hab. Rutherglen, Victoria, 1909 (*French*). From the Froggatt collection, number 60. Froggatt's 60 *a*, also collected by French in 1909 at Rutherglen, is a female *M. trichognatha*, Ckll. It happens, however, that the male of *trichognatha* is known, and by the structure of the abdomen, especially, is quite distinct from *M. holura*.

M. holura is evidently close to *M. canifrons*, Smith, differing apparently by the black hair on the head and thorax above, and the greater extent of the apical red patch on the abdomen. *M. canifrons* occurs in Western Australia.

Megachile cincturata, sp. n.

♀.—Length 13 mm.

Black, with short black hair, some white at sides of metathorax, hair on upper side of first abdominal segment dense and pure white, white also along the extreme base of second, and on its basal two-thirds at sides, abruptly limited apicad; ventral scopa bright coppery red, blackish red on the last segment and apex of penultimate one; mandibles broad, with two strong apical teeth and a long inner cutting-edge; face with short black hair, and some pale to the inner side of bases of antennæ; clypeus short and broad, rough, wholly without keel, but supraclypeal area obtusely keeled; antennæ black; head and thorax above dull and roughened; cheeks much narrower than eyes, sharp-edged posteriorly; pleura strongly punctured; tegulae black; upper wings and apical part of lower very dark fuliginous, strongly violaceous; legs black, hair on hind tarsi very dark reddish.

♂.—Length about $9\frac{1}{2}$ mm.

Similar to the female; between the antennæ is a large bunch of white hair, directed upwards; at the sides of the face the hair is white, overlapped in the middle by black; the lower margin of the clypeus carries a long thick fringe of white hair; lower part of cheeks with long white hair; on the abdomen, the first segment is densely white-haired

at sides and above, the second has a dense white lateral apical band, the third has a trace at sides, and there are three ventral white hair-bands; clypeus densely punctured, with a rudimentary keel (smooth line); antennæ long and slender; punctures of disc of mesothorax evidently separated; sixth abdominal segment broadly rounded, slightly emarginate, with a deep median pit; anterior coxæ with small protuberances; anterior tarsi simple; middle tarsi with ochreous hair.

Hab. Cape York, Queensland, 1909 (*Froggatt*, 40 and 41). The female is the type.

This species, which is extremely like *Calioxys weinlandi*, Schulz. in appearance (this *Calioxys* further approaches the *Megachile* in having hairless eyes), is evidently related to *M. biroi*, Friese, but *biroi* has the clypeus keeled in the female. It is also near *M. lachesis*, Smith, but smaller, and the abdomen (without a keel on the sixth segment in the male) differs considerably from that of *lachesis*.

Megachile fuscitarsis, sp. n.

♂.—Length about 14 mm.

With parallel-sided abdomen; black, including legs and antennæ; hair of face and front light yellow, long and dense; hair otherwise rather dull white, with a good deal of black dorsally, that of vertex black, but of occiput white, of mesothorax mixed with black, of scutellum nearly all black; eyes large, reddish brown; vertex shining, well punctured; mesothorax and scutellum dull, densely punctured; tegulæ piceous. Wings strongly suffused with brown, the anterior wings very dark, especially in the costal and apical regions; b. n. falling far short of t.-m.; first r. n. entering the extreme basal corner of second s.m. Legs with white and black hair, reddish on inner side of hind tarsi; middle tarsi with an extremely long posterior fringe, the upper part of which is nearly all black, the lower (apical) glittering yellowish white; anterior coxæ with very large spines; anterior basitarsi expanded into an enormous flattened structure, which is dark brown or black, with much white hair on the outer side, and has posteriorly a long, thick, black fringe, the base of which has a fringe of short white hair. Abdomen shining, well punctured, with greyish-white hair on first segment and basal part of second, lateral white fringes on the second and third, with a rudiment on the fourth, and greyish-white tomentum (with long black hairs intermixed) about the middle of the fifth and

sixth; discs of third and fourth segments, and sides of fifth, with black hair, the same also on apical part of second and at sides of sixth; sixth segment broadly truncate, with a strong median apical spine; ventral segments with white appressed hair and white fringes.

Hab. Queensland, Sept. 1900 (C. F., Turner collection). British Museum. Exact locality unknown.

Related to *M. vestitor* and *M. fabricator*. Known from *M. vestitor*, Ckll., by the much darker wings, the yellow hair of face, black flagellum, &c.; from *M. fabricator*, Sm., by the character of the anterior legs.

Exoneura angophoræ, sp. n.

♀.—Length about $6\frac{1}{4}$ mm.

Black, with deep ferruginous abdomen and legs; clypeus with a longitudinal pale yellowish line or band; a barely visible transverse supra-clypeal line; each side of face with a small pale yellow mark, which may be absent; clypeus with exceedingly fine scattered punctures; labrum very dark reddish, mandibles almost black; scape obscurely dark reddish in front. Legs black basally; outer side of hind tibiæ and tarsi with coarse black hair; tegulæ very dark rufo-piceous. Wings moderately dusky, much less reddened than in *E. bicolor*. Abdomen without dark spots, but first segment more or less blackish in middle; apical two segments dull, microscopically tessellate, and punctured; tubercles dark, fringed with white hair.

Hab. Sydney, New South Wales, at flowers of *Angophora*, Nov. 24, 1910 (Froggatt, 109).

Allied to *E. bicolor*, Smith, but separated by the colour of the wings, and especially the abundant black hair on the hind legs.

Exoneura froggatti, Friese, was also taken at *Angophora* flowers at Sydney, Dec. 1, 1910 (Froggatt, 108).

Exoneura ploratula, sp. n.

♀.—Length about $4\frac{1}{3}$ mm.; anterior wing about $3\frac{2}{3}$.

Head, thorax, and abdomen entirely black, the face without light markings; legs chestnut-red, the anterior femora black except at apex, but the others clear red; antennæ black, the scape red in front. Wings yellowish hyaline, not dusky, nervures light ferruginous, the large stigma dark red, second s.m. somewhat longer below than high; tibial scopa of hind legs pale yellow; last two abdominal segments dull.

Hab. Sydney, New South Wales, at flowers of *Angophora*, Dec. 1, 1910 (*Froggatt*, 116).

Resembles *E. froggatti* in its small size and dark face; *E. botanica*, Ckll., in its small size and black abdomen.

Trigona angophoræ, sp. n.

Worker.—Length about $4\frac{1}{2}$ mm.

Intense black, without light markings; flagellum ferruginous beneath; labrum and mandibles black, the latter reddened at apex, which has a very broad cutting-edge, and mesad of this two small but strong triangular teeth, being thus essentially tridentate; antennal sockets and extreme base of scape testaceous; face with a very fine pale pruinosity due to minute hairs; pleura with greyish-white hair; mesothorax and scutellum shining, with rather coarse erect black hair. Wings blackish translucent, with dark stigma and nervures. Abdomen short and broad, shining. Legs with black hair.

Hab. Sydney, New South Wales, at flowers of *Angophora*, Dec. 1, 1910 (*Froggatt*, 118).

Related to *T. biroï*, Friese, but larger. It is distinguished from *T. carbonaria*, Sm., by the blackish wings, the face narrower below, &c. In typical *carbonaria* the scutellum is fringed with pale pubescence, but, unless I have confused two species under this name, this character is not constant.

PARASPHECODES, Smith.

The species now described may be separated as follows:—

- | | |
|---|---|
| Thorax above with fulvous moss-like hair | <i>bryotrichus</i> , Ckll. |
| Thorax above without such hair | 1. |
| 1. Sides of metathoracic truncation above with a tooth-like projection | <i>microdontus</i> , Ckll. |
| Sides of truncation without such a projection | 2. |
| 2. Males; abdomen black beyond the third segment | 3. |
| Females; abdomen with the apical part red or reddish | 4. |
| 3. Larger; mesothorax rather coarsely punctured; area of metathorax plicate | <i>hybodinus</i> , Ckll. |
| Smaller; mesothorax very minutely punctured; area of metathorax reticulate | <i>recantans</i> , Ckll. |
| 4. Smaller; tegulæ rufo-fuscous | <i>speculiferus</i> , Ckll. |
| Larger; tegulæ piceous | <i>speculiferus</i> , Ckll., var. <i>a.</i> |

Parasphecodes bryotrichus, sp. n.

♀.—Length about $8\frac{1}{2}$ mm.

Head and thorax black; abdomen pale red, the last

segment suffused with blackish; femora at apex, and tibiæ except some dark markings, red, tarsi dark reddish; middle of mandibles broadly and lower part of clypeus red. Superficially, this looks exactly like *P. basilautus*, Ckll., except that the hair on scutellum and adjacent parts is not so dense, and therefore does not appear as a light spot or patch. The species is very close to *P. basilautus*, differing by the darker legs, with fuscous hair on the outer side of middle and hind tibiæ and tarsi. There is a large tuft of long light hair on the upper part of the metathoracic truncation. Flagellum entirely dark.

Hab. Cheltenham, Victoria, 1909 (*French*); from the Froggatt collection, no. 83.

The name of the locality, in this and some other instances, is misspelled on the label; I am able to make the necessary corrections from an accurate list of localities kindly supplied by Professor Froggatt. In my table of Smith's species (*Ann. & Mag. Nat. Hist.*, Sept. 1904) this runs perhaps nearest to *P. taluchis*, but the wings are only slightly yellowish, and the large metathoracic area has only very delicate irregular wrinkles, mainly confined to the base, except a single median one. *P. taluchis* is also smaller and otherwise different.

Parasphecodes microdontus, sp. n.

♀.—Length 8 mm. (but abdomen of type much retracted).

Robust; head, thorax, legs, and antennæ black; abdomen dark chestnut-red, nearly uniform in colour; head and thorax with hair rather abundant, pale dull greyish, very obscurely brownish-tinted dorsally; mandibles dark; clypeus shining, with large scattered punctures; middle of front dull and granular; mesothorax shining, but finely and quite closely punctured; middle of scutellum shining, with the punctures well separated; area of metathorax not defined, very irregularly roughened and wrinkled, with some oblique more regular striæ basally at the sides; posterior truncation sharply defined above and at the sides, and having a tooth-like marginal projection near each upper corner; tegulæ very dark reddish. Wings dusky translucent, a little reddish; stigma and nervures ferruginous; first r. n. entering basal corner of third s.m., third t.-c. and second r. n. much weakened. Hair of legs pale yellowish, more or less fuscous on outer side of tibiæ, pale orange on inner side of tarsi; hind spur simple. Abdomen very finely punctured, without lateral hair-patches.

Hab. Melbourne, Victoria, Aug. 1900 (*C. F.*, Turner collection). British Museum.

In the table in *Trans. Amer. Ent. Soc.* 1910, p. 243, this runs nearest to *P. froggatti*, of which only the male is known. It can hardly be that species, however, on account of the weakened outer nervures. In the table of Smith's species it runs nearest to *P. tilachus*, Sm., but that has the thorax coarsely punctured, the abdomen black apically, &c.

*Parasphcodes hybodin*us, sp. n.

♂.—Length about 10 mm.

Robust for a male; head, thorax, legs, and antennæ black, the tarsi very dark brownish; clypeus with a large transverse pale yellow patch, having a triangular median tooth-like projection, and smaller lateral ones, the outline not unlike that of a *Hybodus* tooth; hair of head and thorax entirely white, the same colour above as below; mandibles black; clypeus shining, with large punctures; front dull; mesothorax and scutellum closely, rather strongly punctured; area of metathorax well-defined, longitudinally plicate; posterior truncation hardly or not defined laterally, its surface hairy; tegulæ large, punctured, dark basally, otherwise light rufous. Wings long, dusky translucent, somewhat reddish; stigma and nervures dark ferruginous; first r. n. meeting second t.-c.; outer nervures hardly weakened; b. n. strongly arched, meeting t.-m., but on outer (apical) side. Abdomen shining, very distinctly punctured, first three segments (except apex of third) bright chestnut-red, beyond this the segments are black, with the hind margins dark brown. The anterior knees are red.

Hab. Windsor, Victoria, 1909 (*French*), Froggatt collection, no. 98.

In the table of Smith's species this runs to *P. hilactus*, Sm., differing at once by the dark legs. In the table in *Tr. Am. Ent. Soc.* it runs near *P. froggatti*, differing by the darker legs, ferruginous stigma, &c., and *P. vulneratus*, which is smaller, with more finely punctured thorax.

Parasphcodes recantans, sp. n.

♂.—Length 8 mm. or a little less.

Rather slender; head and thorax black, with quite abundant greyish-white hair, the same colour above as below; antennæ very long, black, the flagellum obscurely brownish beneath; clypeus with about the apical half and a median upwardly directed lobe light yellow; labrum ferruginous;

mandibles light yellow in middle; mesothorax and scutellum very minutely and densely punctured; tubercles partly red; area of metathorax not defined, with a rather strong, irregular, finely reticulate sculpture; posterior truncation dull and hairy; tegulæ pale testaceous. Wings dusky translucent; stigma and nervures dark rufous; first r. n. meeting second t.-c.; outer nervures hardly weakened; femora black, with the knees, and more or less of a stripe above, red; tibiæ red, the middle pair broadly dusky in middle, the hind ones dusky except at base and apex, becoming black in front; tarsi clear ferruginous. Abdomen very finely punctured, the first three segments (except apex of third) bright chestnut-red, beyond that black.

Hab. Victoria, Feb. 1901 (C. F., Turner collection). British Museum.

In the table of Smith's species this runs to the vicinity of *P. stuchila*, Sm., which has the area of metathorax well defined, the basal half of first abdominal segment black, and the wings clouded at apex. I had taken this for the male of *P. speculiferus*, until I saw the entirely different truncation of metathorax.

Parasphecodes speculiferus, sp. n.

♀.—Length 8 mm. or rather less.

Head, thorax, mandibles, antennæ, and legs black, the flagellum with a very faint reddish tint beneath toward apex; hair of head and thorax dull white, with a faint ochreous tint dorsally; head broad; clypeus with strong punctures; mesothorax and scutellum dull, with excessively dense minute punctures; area of metathorax poorly defined, the basal three-fifths covered with delicate longitudinal striæ, the apical part smooth; metathoracic truncation heart-shaped, well defined, its upper corners broadly rounded, not prominent, its surface smooth and brilliantly shining, with a median groove in which is some long hair; tegulæ dark rich castaneous, with the anterior margin pallid. Wings dusky translucent, the apex a trifle darker; stigma and nervures dark rufous; first r. n. meeting second t.-c.; outer nervures somewhat weakened; hair on outer side of hind tibia and basitarsus dark fuscous; middle femur with a brush of light orange hair beneath near base. Abdomen dark castaneous, very finely punctured, more or less blackish apically.

Hab. Victoria, Feb. 1901 (C. F., Turner collection). British Museum.

In the character of the sculpture of area of metathorax resembles *P. melbournensis*, Ckll., but that is larger, with the upper lateral corners of metathoracic truncation prominent, the pubescence pale fulvous, &c. In the table of Smith's species it runs to 3, and does not go into any of the divisions. *P. tilachus* differs from it at once by the coarsely punctured thorax, *P. lacthius* by the flagellum fulvo-testaceous beneath, *P. taluchis* by the strongly yellowish wings, *P. hillacus* by the clear wings and rufo-testaceous tegulae.

Parusphecodes speculiferus, var. *a*.

♀.—Almost 9 mm. long.

Tegulae piccous, narrowly whitish in front.

Hab. Sydney, N.S.W., at flowers of *Angophora*, Dec. 1, 1910 (*Froggatt*, 105).

I had at first put this aside as distinct, but it has no satisfactory characters.

XXIII.—*Descriptions of new Arachnids of the Orders Solifugæ and Pedipalpi.* By S. HIRST.

(Published by permission of the Trustees of the British Museum.)

IN the present note four new species of Solifugæ and a new pedipalp are described; two other species which I described in earlier papers are commented upon also. Two of the new species of Solifugæ seem to me to be of especial interest: one of them belongs to the subgenus *Galeodopsis*, Birula—a subgenus which can be recognized from all other Galeodidæ by the presence of two pairs of spines on the second segment of the fourth leg. Hitherto *Galeodopsis* was only known to occur in South-east Persia. The new species is from Tripoli, North Africa. The other interesting new species belongs to the genus *Othoes*, which I founded in February 1911 for a very peculiar Galeodid found in the Anglo-Egyptian Sudan. Unfortunately the locality of this second species of the genus is not known.

Galeodes (Galeodopsis) tripolitanus, sp. n.

Closely allied to *Galeodes (Galeodopsis) cyrus*, Poc., but differing from that species as follows:—

Flagellum very different in shape, the blade being much